

On working-class environmentalism: a historical and transnational overview

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Abstract

The article reviews some of the available literature, in English, Italian and Portuguese, on work/environment relationships in historical perspective. I discuss the Environmental Justice (EJ) movement as the one most promising for pushing both the research agenda and public policy towards a better understanding of the connections between work and the environment. At the same time, I argue for the need to creatively re-work the EJ paradigm in a sense that allows to better incorporate labor issues and to elaborate a political ecology of work, in order to build a coherent platform of analysis and public action which could be adopted by both environmental and labor advocates.

Introduction

Trade unions have had a fundamental role in the struggle for better work conditions in industry, but with several ecological limitations. Generally speaking, this struggle has been conducted within the factory, with a weak questioning of the political ecology of industrial production and pollution in society, both at the local and at the global level. Second, insufficient connections have been posed between union's health and safety grievances and more general social struggles for safe and healthy environments. Third, productivism and the paradigm of economic growth have generally not been questioned by larger unions, which continue to this day advocating for faster growth rates in order to either exit the current crisis, or to address social problems.

The current ecological crisis, combined with the financial and economic crisis in so called 'first world' countries, represents a unique opportunity for rethinking the economy in a way which leads to both socially and ecologically sustainable ways of work; it is also an opportunity to imagine (and practice) forms of political action that may be able to connect the defense of people and nature at the same time.

This article will review some of the available literature on work/environment relationships in three different contexts: the US, Italy and Brazil. The choice of these three contexts is due to personal research experiences which, for various reasons, led me to explore them in more detail. This review is thus not intended as a comprehensive survey on the subject, but as a personal contribution to further reflections on the possibilities for a broader articulation of work and environmental justice research and action. In order to do that, I argue, we need to intersect research into occupational, environmental, and public health within a comprehensive conceptual framework, which be able to build upon the concept of social costs as elaborated by non-orthodox economist William Kapp

in his *The Social Costs of Private Enterprise* (Kapp 1971 [1950]).

I will discuss the Environmental Justice (EJ) movement as the one most promising for pushing both the research agenda and public policy towards a better understanding of the connections between work and the environment. In order to make sense of the historical evidence coming from the three countries, I will propose a discussion of 'working-class environmentalism' as a distinctive category within the broader definition of 'environmentalism of the poor' (Martinez Alier 2002). By 'environmentalism of the poor', Alier meant to draw attention to the existence of social struggles in defense of the environment coming from subaltern social groups – contradicting common sense and sociological assumptions about environmentalism as a post-materialist struggle. Though Alier's 'poor' were mostly peasant communities from the global South, he did not exclude the possibility that first world people could also be included in the category – and in fact he theorized a basic equivalence between environmentalism of the poor and environmental justice.

I propose a socio-ecological definition of 'working class' as those people who make a living out of physical work performed in agriculture, industry or service, typically occupying the bottoms of the labor hierarchy, i.e. the lowest paying, highest risk jobs. This definition is consistent with reflections coming from African American sociologist Robert Bullard, generally recognized as the initiator of EJ research and action (Bullard 2000). My definition of 'working class' does not draw any significant distinction between agriculture, industry or service work (including women's unsalaried domestic work), in so far as they are all assumed to be driven by imperatives of productivity, profit and patriarchy which lie outside the sphere of workers' control and are dangerous for their well being and that of their families/communities.

My point of departure is the idea that, since the political consciousness of social costs as environmental and health damage caused by industrialization begins in the work environment, and is physically embodied by working people in their daily interaction with the hazards of production, a reconsideration is needed of the active role that workers have played in shaping modern ecological consciousness and regulation, both within and outside (even, sometimes, against) their organizations.

I will conclude by drawing attention on the important role that working class people can and should have in setting the agenda for sustainability politics.

Labor and the environment as social costs

An excellent point of departure for a theory (and social practice) of linkages between labor and environmental movements can be found in a book called *The Social Costs of Private Enterprise*, written by non-orthodox economist Karl William Kapp (1910-1976) and first published in 1950. The book described in detail various types of social costs, most of which concerned human and environmental health: damage to workers' health (what the author called the 'impairment of labor'), air and water pollution, depletion of animals, depletion

of energy resources, soil erosion and deforestation. The core idea of the book was that social costs are produced by the internal logic of private business, that is the principle of investment for profit at the individual unit level. In order to maximize profit on a given investment, entrepreneurs need to minimize relative costs: in the existing legal and political structure of the US economy, Kapp observed, entrepreneurs found it possible and profitable to shift the real cost of human and environmental health and safety on third parties, namely the workers and society as a whole. This socially accepted entrepreneurial behavior translates, in economic theory, in the concept of 'negative externalities' – that is to say, in the idea that human suffering and environmental degradation be the unavoidable price to be paid to economic growth. Written about seventy years ago, and referring to the US economy and society of the early post-war period, Kapp's book retains its theoretical validity as the most significant example of a tentative economic paradigm internalizing occupational, environmental and public health as interlinked aspects of the same problem, that of the social costs of production in the capitalistic system.

Although his ideas were in advance on his times, Kapp has become a fundamental reference for a new branch of Economics that was born roughly two decades later – when, not coincidentally, his book was reprinted in second edition – and that eventually came to be defined Ecological Economics (EE). What made EE a radically non-orthodox discipline was its refusal of the idea – implicitly accepted by both neo-classical and Marxist economists – that *unlimited economic growth* be the ultimate end of economic policies, and the only possible answer to poverty and inequality. Economic growth, ecological economists point out, implies ecological costs that are not accounted for in current cost-benefit analyses, as they fall outside the sphere of entrepreneurial interest. Ecological economists are able to measure such costs by introducing concepts and analytical instruments that come from the natural sciences, such as, for example, the entropy law: this shows that each additional unit of GDP implies a waste of energy and materials that will never again be available for other uses (Roegen 1971, Rifkin 1980, Daly 1991). Thus far, EE has developed a whole series of such new, interdisciplinary analytical instruments, which are used to describe the ecological costs of economic activities, both in terms of energy and material use and in terms of waste production and environmental degradation.

However, the human costs of production for both industrial and 'meta-industrial' workers (Salleh 2010) as well as for public health in general, are not specifically addressed by ecological economists, who seem to consider them alien to their sphere of interest and competence.

While EE has failed to formally incorporate labor and social inequalities into its own analytical realm, it is also true that its existence has encouraged, inspired, and/or interacted with new approaches to ecology within the social sciences, which in turn have allowed an advancement of our understanding of work/environment relationships. Theoretically, an important contribution in this direction has come from the area of Political Ecology, which can be broadly

understood as the study of nature/power relationships. Starting from a Marxist perspective, political ecologists have elaborated on what James O'Connor calls the second contradiction of capitalism, that between capital and nature (O'Connor 1998). Scholars in this field have also conducted an important scrutiny of Marx's and Engels' work, demonstrating how these were much more consistent with ecological thinking than was commonly reputed. In Marx's view, to begin with, the alienation of 'man' from nature was a social phenomenon which preceded and allowed the alienation from labor, and as such it required a historical explanation (Foster 2000). Engels's writings on the conditions of the English working class during the industrial revolution, and Marx's own observations on the same subject, are the best example of how the link between the deterioration of working and living environments under capitalism was clearly perceived by the two thinkers as a crucial aspect of the new regime of production (Foster 2000, Merchant 2005, Parsons 1977, Benton 1996).

The eco-Marxist perspective has indeed been an important contribution given by Political Ecology to our understanding of work/environment relationships. It may help to overcome, from a theoretical and even ideological point of view, the classical opposition between Marxism and environmentalism, which has formed a serious impediment to possible alliances and coalitions between the two movements at the political level. A crucial contribution to the ecological critique of capitalism (and partly of Marxian politics) has been given by what Carolyn Merchant calls 'socialist eco-feminism', based as it is on the centrality of reproduction, instead of production, so effectively showing the way out of modernist and productivist paradigms of social relations (Merchant 2005).

Another important step in this direction, however, has also come from the study of the environmental movement itself, which has demonstrated how this is a plural social movement, made up of different and at times contrasting instances coming from different social sectors and economic interests. Environmentalism, in other words, is a misleading unifying label, that tends to hide the existence of non mainstream varieties of environmental struggle, which are the object of various forms of cultural, social and political silencing (Guha and Martinez Alier 1998, Gottlieb 1993).

The quest for environmental justice

Among such 'radical' environmental movements, the one that has been considered the most significant novelty of the last twenty years, both in terms of new possibilities for social mobilization and as a source of fresh perspectives for the social sciences, is the Environmental Justice Movement (EJM).

In its first theorization, by African-American sociologist Robert Bullard, Environmental Justice (EJ) is a social struggle arising from the awareness of how the social costs produced by a history of 'uneven development' in the capitalist system have unequally affected different social groups, especially

along lines of racial discrimination. Resting on political-economic analysis, the EJ approach has developed as a way to acknowledge and contrast the social inequality of environmental costs, and is characterized by mixing, explicitly and intentionally, scientific and civil rights discourses. The term was first used in the US in 1992 on the occasion of a conference of new social movements that fought against urban pollution, but which did not feel represented by mainstream environmentalism. Basically, Environmental Justice is concerned with the unequal distribution of social costs between different human groups according to distinctions of class, race/ethnicity, and spatial placement. Environmental injustice is strongly related to space, i.e. to the unequal distribution of pollution and environmental degradation at local, national or transnational level: distinctions such as urban/rural, center-periphery or north-south are of primary relevance for the understanding of environmental injustice (Bullard 2000, Schlosberg 2007, Faber 1998, Sandler and Pezzullo 2007).

Thus, as a research program, EJ is the analysis of social inequality face to the environmental costs of economic activities. As a social struggle, EJ constitutes a challenge to legal and political systems in the sense of recognizing the protection of the environment as a civil right, crucially affecting marginalized and discriminated social groups. But what most characterizes EJ, both as a research program and as a program of collective action, is the concern for public health.

This concern binds EJ strongly to Kapp's concept of social costs: threats to the health of workers, of specific groups of population, of the nation and even of other species, through the deterioration of working and environmental conditions in general, caused by economic activities. As in Kapp's approach, so in what we may term the EJ paradigm occupational, environmental and public health are indissolubly linked to each other.

The EJ movement (EJM) has had a far greater influence within social science studies of the environment than in the sole US context. In the course of the last two decades, inspired by EJ concerns for social inequalities and discrimination, a number of scholars worldwide have contrasted the idea that the environment is a luxury that becomes socially appealing after a country, or a particular human group, has achieved material wealth. Empirical research has demonstrated how the subaltern classes, manual workers, indigenous peoples and the poor in general are often the first to defend the environment in which they work and live, or from which they get their livelihood. The Catalan scholar Joan Martinez Alier has elaborated a unifying definition for these subaltern environmental struggles as 'environmentalism of the poor', highlighting how they are tied to material issues of primary importance to the groups most vulnerable to environmental degradation in terms of human health, livelihoods and well-being. Basing on empirical evidence on the 'environmentalism of the poor' from Latin America, Southern Europe and Eastern Asia, Martinez Alier has come up with a theory of Ecological Distribution Conflicts (EDCs), that is conflicts for the social distribution of environmental costs and benefits deriving from the material interchange between societies and nature, and thus from the

social manipulation of environmental resources under different regimes of accumulation (corporate, State, agrarian, industrial, colonial or post-colonial, etc.). (Martinez Alier 2002)

EDCs and the 'environmentalism of the poor' are intended by Martinez Alier as varieties of EJ struggles. They define social struggles that arise outside the sphere of mainstream environmental politics, and that are the object of harsh, often violent, repression on the part of State, corporate, and even criminal powers. EDCs are usually brought up by people who are targeted by processes of environmental devastation caused by development projects, which seriously compromise or destroy their living environments, and so their communities' health and safety, cultural integrity, and livelihoods. This is not only an 'indigenous people' issue (although it is largely so): the numerous struggles of local communities against high speed trains, incinerators, nuclear plants and the like in so-called 'First-World' countries are all EDCs, in which people defend the integrity of their territory and lifestyle against the pervasive and oppressive logic of 'development'.

Even though livelihood struggles do not typically qualify as labor struggles – at least not in academic thinking – work is intrinsically involved in EDCs. Most development projects, in fact, bring about a thorough restructuring of job opportunities in the region, and have important repercussions on both labor relations and work conditions. The new projects usually have a destructive impact on preexisting forms of work, such as fisheries, agriculture, hunting and wild-fruit collecting or local tourism, because they thoroughly alter the local landscape, contaminate vital resources such as water, air and soil, compromise the reproduction of living things. Labor relations tend also to become more exploitative, following either the factory or the plantation discipline, with its inception of landless, indentured, and sometimes slave labor, often coming from outside the region. Work conditions may in fact reach unprecedented levels of risk and un-healthiness, as in the case of oil extraction and other mining activities, or industrial cultivations with intensive use of agro-chemicals, such as sugarcane or soy (Wright 1990 [2005], Santiago 2006, Sellers and Melling 2012).

All EDCs are, or can potentially become, struggles for Environmental Justice. In the next section, I will give some detailed examples, and suggest some lines of interpretation, about the intersection between EJ and labor struggles.

Working-class environmentalism: stories across three countries

With 'environmentalism of the working class' I intend to label the day-to-day struggles that workers at the bottom of the agriculture, industry and service sectors lead, both individually and in organized form, to defend the integrity and safety of their working environment and of the environment where their families and communities live. In 'working-class environmentalism', ecology is understood as a set of connections between the spheres of production and

reproduction: ecology is therefore the system of relationships between what is used to produce, what is produced, the waste of production, the bodies of those who produce, and the environment in which production, reproduction and waste take place. An ecological vision of work should in fact include both male and female workers, and production as well as re-production processes (Merchant 2010). In sum, to use the language of scientific ecology, 'working-class environmentalism' is concerned with a particular population, manual workers (and their communities), and with its 'natural' habitat.

Unlike other species, this 'population' is endowed with self-consciousness and capacity for political action. Indeed, the awareness of the organic connections existing between labor, environment and health is capable of producing a radical critique of the economic system and a new emancipatory discourse, which is potentially very dangerous for the political-economic order. Working-class environmental struggles do not have as a primary objective the protection of nature as such or of other living species for their own sake, because they are focused on what are typically a mix of 'class' and 'gender' issues, i.e. the defense of the living conditions of the working class. Nevertheless, they can and should be defined as environmental struggles, because they are an expression of a type of environmentalism alternative to that of the upper-middle class and of national and international regulations.

A historical sign of the new possibilities opened by these 'dangerous liaisons' between labor and environmentalism was the alliance between environmentalists and trade unionists that arose spontaneously in the streets of Seattle, with the slogan 'Teamsters and Turtles', during the 1999 protests against the WTO (Rose 2000, Silverman 2004). This was neither the first nor the last such fact, and witnesses the emergence of a new form of intra-organizational solidarity, which in turn reflects a new political consciousness of the connections between environmental and social costs in the neo-liberal era. In the next section, I will offer a comparative overview of historical linkages between labor, women and environmental movements in three different contexts – the US, Italy and Brazil – all testifying to the concrete possibilities which may be opened up by the overcoming of existing divisions between the three movements at the political level.

The US

During the 1960s and 1970s, the US witnessed a fascinating, though little known story of coalition between oil, chemical, atomic, steel and farm workers unions with some environmental organizations, in order to protect workers and the national community against the risks of industrial production and waste disposal. These links between environmentalism and unionism led to passage of some major pieces of environmental regulations, such as the Clean Air Act of 1970 and the Clean Water Act of 1972 (Gottlieb 1993).

Starting with a series of accidents (such as the 'killer smog' which seriously affected 6,000 persons in Donora, Pennsylvania, in 1948), during the post-war

years the awareness of potential health risks from pollution became quite advanced in US working class people in comparison to that of their fellow citizens' (Dewey 1998: 48). During the fifties, the United AutoWorkers, through their president Walter Reuther and vice president Olga Madar, pressed the government for the regulation of gasoline emissions, even if this meant losing a number of jobs. In Madar's opinion, workers were first and foremost American citizens, 'neither they nor their children develop any immunity to automobile exhaust pollutants or any other' (Dewey 1998: 52).

According to Robert Gottlieb, author of a well documented history of the US environmental movement after World War II, the first step in the direction of labor/environmental alliances was played by a number of independent physicians who, in the early 1960s, had begun examining unions' welfare and retirement records, in order to build their counter-arguments against corporate science. The first and most striking example was the black lung movement, which led to the first of a series of health and environmental acts, all passed between the end of the 1960s and the early 1970s: the Mines Safety and Health Act (1969), the Occupational Safety and Health Act/Administration (1970), the Environmental Protection Act/Agency (1970). The role of health professionals, coming from the ranks of the students, feminist, environmental and radical left movements, in soliciting those reforms and supporting the labor movement in their implementation, was crucial in the US case, where they formed the COSH groups (Committees on Occupational Safety and Health), as well as it was determining in the Italian case (the SMALs experience, as we will see in the next section). In both contexts, those 'new' physicians shared a common methodological revolution that put workers at the core of the knowledge producing process. Also, in both cases they shared this methodology with sectors of the labor movement particularly active in the process of empowerment concerning health/environment related reforms. As a leader of the Oil Chemical and Atomic Workers union, Anthony Mazzocchi, 'the most influential figure within the new occupational health movement' in the seventies, emphasized 'the importance of worker-generated activity and the potential links that could be established between workers and public interest and professional groups' (Gottlieb 1993: 365). Mazzocchi had also been instrumental in the passage of environmental reforms such as the Clean Air and Clean Water Act. Another obvious example of a strict relationship between labor and environmental struggle is represented by the experience of the United Farm Workers of Cesar Chavez, which, in the early 1960s, first raised the issue of pesticide poisoning as a unified struggle in defense of both workers and consumers' health (Gottlieb 1993, Montrie 2008).

While grassroots health organizations were not always welcomed by union leadership – because of their influence as rank and file activists – at the local level the alliance between labor and environmental activists was strong, and the labor hegemony was not under discussion, as many unions' officials served as COSH directors, and some unions funded them. The seventies also offered plenty of evidence of a labor/environmental alliance, such as the EFFE groups (Environmentalists for Full Employment), the Urban Environmental

Conference, Ralph Nader's and Barry Commoner's networks, etc. Nevertheless, Gottlieb remarks, for the environmental movement workplace and social justice issues remained external to their mission, as well as the labor movement 'remained bound by union acceptance of the structure of industry decision making' (Gottlieb 1993: 366). The conflictual relationships between labor and the environmental movement only developed during the eighties, and was a historical artifact due to the political turnover of the Reagan era (Gordon 1998). Looking for the relationship of US working class people with nature, as distinct from that of the upper and middle classes, environmental historians have defined them as 'expedient' or 'subaltern' environmentalism. In his study of coal mining in Appalachia, for example, Chad Montrie proposed an explanation of how 'farmers and workers formulated their own versions of conservationism and environmentalism, grounded in their experiences tilling fields and working in factories'. Encompassing a broader category of issues concerning class, race and gender versions of environmental conflicts, the history of this working-class environmentalism seemed a new way to look at the issue of social inequalities and justice within environmental history (Montrie 2000, Dewey 1998, Gordon 1998, Hurley 1995).

The most complete examination of the jobs-vs.-the environment discourse in the United States, however, comes from a study in political science. In *Labor and the Environmental Movement: The Quest for Common Ground* (2004), Brian Obach observes how 'workers are not typically the lead opponents of environmental measures. [...] It is when industry seeks allies in opposition to environmental measures that workers are drawn into the fray'. It is a communication strategy: since a threat to corporate profits will not move the public –he notes – 'a more sympathetic victim is necessary, and workers are the obvious group to serve this purpose'. The goal is to 'shape the perception that environmental protection is antithetical to economic expansion' (Obach 2004: 10). This discourse, however, clashes with the growing evidence that 'the working class bears a disproportionate share of the harm due to environmental destruction', while environmentalists 'bear a disproportionate share of the blame' for the actual loss of jobs in the US, which is due to environmental regulation only in 3% of cases. The rationale for this corporate discourse is the aim at keeping the two most powerful social movements in the country separated, for their alliance holds a potential for radical reforms (Faber 2008).

The alienation between labor and environmental movements, so frequently experienced – in the US and elsewhere – to have become an unquestioned commonsense assumption is in fact the result of a political battle taking place historically and therefore needs a historical explanation. The 'jobs-vs.-the-environment' discourse has been construed in connection with the international business cycle, and with the imposition of neo-liberal politics: in 'mature industrialized countries', such as the US, that discourse evolved and acquired social hegemony between the end of the 1970s and the first 1990s, when it has been finally opposed by a recovery of social movements struggling for environmental justice and ecological democracy.

That rise and fall of the labor/environmental alliance in the US also reflects the international dimension of the economic system. While 'mature economies' have begun to give a green façade to their industrial apparatus, by also shifting the most polluting industries and the dirtiest wastes to the 'developing' countries, those countries have been experiencing the worst forms of exploitation of both labor and the environment. There, again, the promises of modernization, the lack of alternatives, and the 'job blackmail', that had shaped the terms of the 'jobs-vs.-the-environment' discourse in the western world, have gained momentum and contributed to a new cycle of high toxicity and the spread of industrial risk worldwide (Martinez Alier 2002).

Italy

The story of labor-environmental coalitions in Italy is very similar to that which occurred in the United States. It started as an alliance between workers' organizations and 'militant' scientists in the struggle for the recognition and regulation of industrial hazards, eventually producing important social reforms such as the Labor Statute (1970) and the Public Health System (1978) (Barca 2012). Focusing on the work environment, that peculiar type of environmentalism was based on the recognition of the centrality of the industrial manipulation of nature in determining the deterioration of both occupational and public health. Such new ecological consciousness arose from the totally new "conditions" of production and reproduction that were formed in the country's tumultuous economic boom of the late 1950s, during which Italians experienced such a rapid and massive industrialization that all aspects of social life were revolutionized. Due to the rapid industrialization of the preceding decade, the 1970s were also a time of significantly increased environmental degradation, affecting not only the workforce, but the Italian population at large, through widespread and largely uncontrolled pollution (Di Luzio 2003, Luzzi 2009).

Spurring from the 'economic miracle', the Italian experience of 'working class environmentalism' was generated in the cultural context of the 1960s and 1970s, marked by a strong cultural hegemony of the Left parties and the labor movement, but also by student protests and new political movements pressing for radical changes in the organization of social life. This new Italian environmentalism was also crucially influenced by the spread of a new international environmental movement (Luzzi 2009), much less devoted to conservation than in the past and more concerned with the toxicity of industrial production, especially petrochemicals (Gottlieb 1993). What marked the Italian experience, however, was the much stricter link existing between the new environmentalists and the labor movement, unions in particular, which makes appropriate to speak of a very 'labor environmentalism'. This movement began to take shape since the early 1960s, when a group of sociologists at the University of Turin formulated what was to become the new methodology of research into occupational health, based on the direct production of knowledge on the part of workers. Having been successfully experimented with in 1961 at

the Farmitalia plant, a subsidiary of the powerful petrochemical group Montedison, those methodologies were accepted by the Italian labor movement and became the core principles of labor environmentalism. Courses and lectures on the ecology of the work environment were organized throughout the country by the union confederations. In 1970, with the passing of the new Labor Statute, the principle of direct control over the work environment on the part of workers became law (Calavita 1986, Tonelli 2007).

A landmark event in the formation of an Italian 'working-class environmentalism' was, in the fall of 1971, a national meeting on the theme 'Man, Nature, Society' held by the Italian Communist Party at its yearly cadres' school in Frattocchie. Opening the conference, physician and leading party member, Giovanni Berlinguer, admitted the need to update Marxist orthodoxy in order to take into account the concept of natural limits; he also highlighted how toxicity had become the existential condition of global capital. Berlinguer, and other top-ranking cadres and 'organic intellectuals', compared ecology to socialist planning, and emphasized the need for the party to consider the environment a working class priority (Hardenberg and Pelizzari 2008, Luzzi 2009). In a sense, the whole experience of labor environmentalism in Italy can be considered a product of that meeting, which had encouraged Communist activists to link ecology and class struggle. In 1972, one year after Frattocchie, a national conference of the union confederation was held in Rimini on the theme 'Industry and Health'. Many other signals throughout the 1970s testify to both intellectual and activist ferment in linking Marxism and ecology. The publisher Gian Giacomo Feltrinelli, for example (himself also one of the most prominent leftist intellectuals and political activists of the period) initiated a book series dedicated to 'Medicine and Power', including books on health risks in industrial societies. Even more radical was the position of another leftist intellectual, the journalist Dario Paccino, author of a book entitled *The Ecological Trick* (Paccino 1972) that exposed nature conservation as an elitist concern and – by contrast – put workers' bodies firmly at the centre stage of a true environmentalism.

Probably the most formative readings, for a generation of Italian leftist environmentalists, were two books that were published in 1976 and 1977, in the aftermath of the Seveso industrial disaster, both resulting from the authors' active militancy in the local struggles for damage recognition and repair, as well as from political activity within and/or alongside the Communist Party and other radical left organizations. The first book, titled *Ecology and Society. Environment, Population, Pollution* was co-authored by the Italian urban ecologist Virginio Bettini with the American biologist Barry Commoner: it explicitly connected environmental struggles to a class perspective, theorizing the need for a 'class ecology' as opposed to the 'ecology of power' advocated by mainstream organizations and reflected in the existing legislation on nature conservation in the country. The second book, named *What is Ecology. Capital, Labor and the Environment*, was written by Laura Conti, one of the most significant figures of the Italian environmental movement: as a deputy in the Communist Party, a labor physician and an ecologist, Conti embodied the very

essence of the class alliances which stood at the basis of the Italian 'labor environmentalism'. Moreover, her book can be considered a foundational moment in the birth of an Italian Political Ecology (Bettini and Commoner 1976; Conti 1977; Barca 2011).

All this militant-intellectual debate on Marxism and ecology resulted in the creation of a series of more or less durable organizations and local movements. The alliance between unions and environmentalists was epitomized in the experience of the SMAL, Medical Services for the Work Environment, a union-led institution formally recognized by the Lombardy regional government in 1972, and devoted to supporting workers' claims for independent control over the work environment (CGIL-CISL-UIL 1976). A few years later, in 1976, the grassroots-experts' organization *Medicina Democratica* (MD) was established, becoming the most active in supporting social struggles for the defense of occupational, environmental and public health at the community level. MD was founded and led by the medical doctor Giulio Maccacaro, who also directed the journal *Sapere*, the country's most significant expression of 'militant science', which mostly addressed issues of industrial pollution and its effects upon human health and the environment. The *Lega per l'Ambiente* (today *Legambiente*, probably the most popular Italian environmental organization), was born as a sub-section of the Communist Party's cultural/recreational activities. It was mainly concerned with the problems originating from industrialization – from energy to pollution and food contamination, from the impact of automobiles to waste management. Laura Conti and Virginio Bettini, together with the Communist deputy and ecologist Giorgio Nebbia and – again – Barry Commoner, were among the founding members of the organization (Della Seta 2000).

The awareness of environmental health connections as a shared bodily experience among factory workers and local people – the many women who experience breast cancer and those who are faced with fetal malformations, the parents of children with asthma, the fishermen and farmers who become aware of unusual death and illness in the non-human living world – is a common feature of Italian working class communities, and a leading thread throughout the period 1970s-2000s. In the petrochemical area of Augusta, Sicily, massive fish deaths and the birth of malformed children in the late 1970s were clearly perceived by the population as interconnected facts and easily traced to mercury discharges from the nearby ENI refinery: this led to massive social uprising, involving other communities along the coast between Augusta and Priolo, where many polluting industries were clustered together to take advantage of cheap power and other infrastructures. What is most remarkable about that experience is that, despite the serious economic and occupational crisis occurring in the petrochemical sector after 1973, factory workers and the local population found themselves on the same front of what soon became an Environmental Justice struggle, leading to a far reaching investigation and several court trials, reaching before the European court in 2005 (Adorno 2009). Other similar cases show how that early season of 'class ecology' had a durable legacy, that, starting from the 1990s, spurred a number of Environmental

Justice struggles, i.e. major lawsuits against large industrial groups, especially the chemical, petrochemical and asbestos industry. One of the earliest and most relevant court case concerned the country's largest petrochemical complex, that of Enichem in Porto Marghera, near Venice (Allen 2012). Interestingly enough, it was a former Enichem worker, Gabriele Bortolozzo, who initiated the process of popular epidemiology and environmental data collection which eventually brought what was probably Italy's most powerful industrial corporation, a State company, to court in 1998. Working at the Enichem plant from 1956 to 1990, Bortolozzo was an environmental activist engaged in the protection of the lagoon; in the mid 1980s, and with the help of *Medicina Democratica*, he started a public campaign to collect data and information exposing the company's negligent policy in both occupational and environmental health protection (Bettin 1998, Rabitti 1998). A similar story happened again in the petrochemical town of Manfredonia, Apulia, where the investigation was based on a popular epidemiology initiative promoted in 1998 by the former worker Nicola Lovecchio, again with the support of *Medicina Democratica* (Di Luzio 2003).

In conclusion, despite an intellectual project which heavily rested on the organizational support of the Communist Party, and also partially constrained by ideology, the Italian 'class ecology' paradigm introduced into the environmental debate and political scenario a perception of ecology as something having to do with the human body and its *situatedness* within the configuration of power relationships, both inside the factory and in the local space. Moreover, consciousness of the political link between occupational, environmental and public health was not a philosophical speculation for a few militant scientists: in fact, it was largely shared within the Left, and in the union confederations, and led to a series of social struggles both at the workshop and at the community level. The time has come perhaps to tell the story of these struggles, tracing their material and ideal connections with each other and with the history of the Italian 'working class environmentalism'.

Brazil

As in the Italian and in the US case, 'militant medicine' played a crucial role in the formation of a working-class centered environmental consciousness in Brazil. An unsuspected link exists, in fact, between the Italian and the Brazilian experience of 'working-class environmentalism', through the exchanges that the Brazilian Left established with the Italian, involving visits to the country by Giovanni Berlinguer and the translation of Laura Conti's book in the mid 1980s (Porto 2005).

What differentiates the Brazilian experience in respect to the other two countries is the relevant role played by rural workers in the formation of a popular environmental consciousness, bringing up its own vision of ecology and of environmental policies. The two most striking examples are: 1) the struggles of Chico Mendes' rubber tappers against the deforestation of the Amazon during

the 1980s, and 2) the landless workers' movement MST (Movimento Trabalhadores Sem Terra) of the 1990s and 2000s. In the rubber tappers' movement – still very much alive in memory and local activism in the area – social justice was inextricably linked to environmental protection as a fundamental support for the life and work of the Amazonian communities. This organic link between labor and environmental justice as envisaged by the movement eventually found expression in the concept of – and political struggle for – the 'extractive reserve', i.e. the idea that land be maintained as public (state property), while rural communities retain the right to work natural resources collectively, in order to avoid the exhaustion of resources by capitalist appropriation with subsequent impoverishment of the rural population. The concept of 'extractive reserve' was a major contribution that this movement gave to develop anti-deforestation policies on a socially just base (Rodriguez 2007).

The landless workers' movement MST is another clear example of the existence of a working-class vision of ecology and of nature/society relationships, based on rural community struggles for land and livelihoods, as well as on farm-workers' experience of health damage caused by pesticides and industrial agriculture in general (Wolford and Wright 2003). Along with its general battle for agrarian reform, the MST promotes and/or is actively involved in struggles for forest preservation and against GMOs and agrochemicals.

A landmark in the relationship between labor and environmental movements in Brazil was the global Earth Summit promoted by the UN in Rio de Janeiro in 1992. In that occasion, the major union centre (CUT, Central Única dos Trabalhadores) played an important role in coordinating civil society initiatives, by actively participating in the executive board of the Brazilian NGOs Forum and in the elaboration of its documents and deliberations. Afterwards, a permanent Environment Commission was created within the CUT and ecology and sustainability entered CUT's official language and positions as regards the country's economic development process (Martins 2004). The Commission came to complement the activities of a preexisting Health, Labor and Environment Committee, which – as with the Italian Union Federations of the mid 1970s – was already battling on issues of work conditions in terms of health and safety of the work environment, as well as training a new generation of health and safety activists. As in the US case, the Brazilian unions thus played an important role in the passage of the country's environmental legislation (Neto 2004).

With the rapidly intensifying industrialization process started in the 1990s, environmental struggles in Brazil began to be more and more connected with the urban environment and the factory as a place where the socio-ecological contradictions typical of industrial development were literally exploding. Subsequently, an EJ movement started to take root, both in society and in academia, in the early 2000s. The starting point for a process of self-reflection of Brazilian EJ was a book series entitled 'Unionism and EJ' (*Sindicalismo e Justiça Ambiental*) published in 2000 by CUT in conjunction with research centers in the area of social-economic analysis and urban and regional planning

(IBASE and IPPUR) of the University of Rio de Janeiro (Acselrad, Herculano and Pádua 2004). The book collected several stories of industrial contamination and environmental justice struggles that were developing from severe cases of workers' poisoning and crucially involved local communities; the struggles were actively promoted by unions such as the Chemical, Petrochemical, Petroleum and Farm-Workers, all of which ended up participating in the formation of the Brazilian EJ Network RBJA (Rede Brasileira de Justiça Ambiental) in 2001.

The Network was created after an international meeting on 'Environmental justice, work and citizenship', held at the University of Niteroi with the participation of EJ movements and scholars from the US, Chile and Uruguay. The promoting group included social and environmental movements, unions, Afro-Brazilian and indigenous communities and individual scientists. Among the most relevant activities, the RBJA has developed a virtual archive, collecting documentation from hundreds of EJ struggles and/or EDCs in waste disposal, agriculture, extractive industry, water and biodiversity conservation, energy production and other infrastructures, including also judicial and governmental documents. With its participatory action-research methodology, the Brazilian EJ Movement reflects a clear perception of occupational, environmental, and public health as interconnected social costs of the country's economic growth, seriously affecting the Brazilian working class and disenfranchised groups (landless peasants, indigenous and non-white communities in general).

Conclusions

As William Kapp had argued, environmental and health costs represent a large part of the social costs of production in advanced industrial societies. The historical evidence demonstrates how these costs are paid in the first place by workers through the labor process itself and by the most vulnerable social groups. Not surprisingly, being the most affected by the negative effects of pollution and environmental destruction, the working class has developed an active role of primary importance in the formation of a modern ecological consciousness of social costs. In order to formulate more inclusive and strategic coalitions for Environmental Justice, articulated around the diversity and complexities of people's experience of environmental problems – e.g. including rural communities, or meta-industrial jobs such as the, mostly women and non-white, cleaning workers – it has become essential to recognize such a historical role, and analyze its limitations and potentialities.

To conclude, I propose four basic points for a work-centered theory of Environmental Justice:

- 1) as a primary agent of energy and matter transformation through the labor process, workers – broadly defined as those performing physical labor, including non-paid housekeeping and life-supporting work – are the primary interface between society and nature: therefore, sustainability policies should

always be centered on the workers' subjectivity and on the sustainability of work in the first place;

2) working-class people are the most threatened by the destruction of the environment because they work in hazardous environments, live in the most polluted neighborhoods, and have fewer possibilities to move to some uncontaminated area or buy healthy food. Therefore, they hold the greatest vested interest in developing sustainability policies. It is in the interest of the dominant social order to obscure this fact and prevent the formation of alliances between the social movements;

3) environmental policies should build sustainability from work and around it: this means reorganizing production on the basis of a sustainable work, and not simply introduce technical solutions such as incineration of waste or nuclear energy, which only allow the continuation of accumulation and economic growth, while introducing new threats to workers and their communities;

4) incorporating workers and the labor process within the standard theory of environmental justice would require a comprehensive revision of both research and activism methods and scope, involving collective discussions with labor as well as environmental activists and experts in various areas related to technology, work organization, health and ecology.

The history of 'working class environmentalism' has shown how, though contrasted by dominant political and economic forces, the alliance between unions and environmentalism is not only necessary, but indeed possible.

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